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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ALHIJA, SAIF A	

ART UNIT	PAPER NUMBER
2128	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/812,935	OBA ET AL.	
	Examiner	Art Unit	
	SAIF A. ALHIJA	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-6, and 8-11 have been presented for examination.

Claim 7 has been cancelled.

Claims 12-51 have been withdrawn in response to the restriction dated 4 June 2007.

Response to Arguments

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 24 July 2008 has been entered.

NON-PRIOR ART ARGUMENTS

i) Applicant argues the 101 rejections of claims 1-11. Applicants correctly cite In re Comiskey which supports the 101 rejection provided by the Examiner. In re Comiskey requires the involvement of another class of statutory subject matter which in this case is a machine however as Applicants have correctly cited the machine must not be generic but rather "a particular apparatus." The recitation of an "input device" and a "transformation processing device" do not constitute specific machines but rather generic machines since these broad terms appear to correspond to a keyboard/mouse and a computer. The Examiner has re-evaluated the claims in view of the 101 rejections previously made and the rejections are maintained.

ii) The 112 2nd rejections are withdrawn in view of Applicants amendments.

PRIOR ART ARGUMENTS

iii) Applicants argue that the reference does not disclose a transformation processing device configured to displace a node as recited in claim 1. The reference teaches the DOGME system as one example of the transformation device. See Page 352, left column.

iv) Applicants argue that the reference does not teach the types of transformations along the bending lines and how the node is displaced however as per section 3.4.1 the shape transformation is carried out using constraints which as defined by Borrell on page 352 are displacement values. As stated further on page 352, left column the displacements are done based on specific constraint points which represent the nodes recited in the claims. Applicants appear to argue that the methodology of shape transformation between the claimed invention and

the prior art of record is different. However the Examiner notes that claims merely recite that a node is displaced by an **"amount corresponding to a component of the input transformation vector in the extending direction of the bending line"** which is defined as a constraint in Borrell. Further the claims recite displacing along a **"vector obtained by projecting the transformation instruction vector onto an extension plane of an article shape plane at that node"** and Borrell discusses numerous methods of transformation based on projection and transformation vectors see bottom right of page 352, Section 2.1 which recites **"displacement vectors"** and deformation following projections. Therefore due to the lack of specificity in the claims the rejections are maintained. Applicants are respectfully encouraged to explicitly recite in the claims the functional differences between the claim language, which must be taken in its broadest most reasonable form, and the prior art of record in order to expedite prosecution.

EXAMINERS NOTE

v) Examiner has cited particular columns and line numbers in the references applied to the claims for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

vi) The Examiner respectfully requests, in the event the Applicants choose to amend or add new claims, that such claims and their limitations be directly mapped to the specification, which provides support for the subject matter. This will assist in expediting compact prosecution.

vii) Further, the Examiner respectfully encourages Applicants to direct the specificity of their response with regards to this office action to the broadest reasonable interpretation of the claims as presented. This will avoid issues that would delay prosecution such as limitations not explicitly presented in the claims, intended use statements that carry no patentable weight, mere allegations of patentability, and novelty that is not clearly expressed.

PRIORITY

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim Rejections – 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

MPEP 2106 recites:

The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result'' State Street 149 F.3d at 1373, 47 USPQ2d at 1601-02. A process that consists solely of the manipulation of an abstract idea is not concrete or tangibles. See In re Warmerdam, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed.Cir. 1994). See also Schrader, 22 F.3d at 295, 30 USPQ2d at 1459.

4. Claims 1-6, and 8-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

i) The claims recite shape transformations and design data and as such do not produce a useful, concrete, and tangible result. The claims appear to be directed to a CAD environment however as presented they appear to be merely an abstract idea as well as mere data manipulation.

Appropriate correction is required.

All claims dependent upon a rejected base claim are rejected by virtue of their dependency.

Claim Rejections – 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent,

except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-6, and 8-11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by **Borrel et al. "Deformation of n-dimensional objects."**

Regarding Claim 1:

The reference discloses A design shape generating apparatus for generating a new design shape of an article by performing a shape transformation process with respect to a design shape of the article which has been already generated, the apparatus comprising:

an input device for receiving transformation instructions from an operator; **(Page 351, Introduction, interactive editing)** and

a transformation processing device for performing an operation of the design shape which has been already generated in accordance with the transformation instructions which are input, **(Page 351, Introduction, shape-dependent transformations)** wherein

the input device receives input for designation of a shape attribute of the article between of a transformation region for which the shape transformation process is to be performed and a maintaining region which maintains its shape, and input of a transformation instruction vector which is defined by a direction and an amount of transformation with respect to the article, **(Interpreted to be shape deformation. Section 2.1-2.2, and 2.3.1-2.3.3)**

the transformation processing device is configured to not displace a node located at a boundary between the transformation region and the maintaining region,

subdivide the transformation region into a plurality of shape elements; **(Section 3.4.1, Right Column, Two Deformations starting with "This function f can....") and**

displace a node defining the shape of the shape elements and belonging only to the transformation region in accordance with the input transformation instruction vector as follows **(Section 2.1, point displacement. Section 2.2, intermediate space)**

when the node is located on a single bending line of an article, the node is displaced in the extending direction of the bending line and by an amount corresponding to a component of the input transformation vector **(e.g. merely shape deformation and transformation)** in the extending direction of the bending line, **(Figure 6. With respect to the type of shape transformation the reference discloses in Figure 6 and in section 3.4.1 three dimensional deformations. A single bending line, multiple bending lines, and no bending lines can be seen in the Cylinder, Cone, Pyramid, Sphere, etc shapes of Figure 6 which are the resultant of the deformations of the cube of Figure 6.)**

when a node is located on the intersection of a plurality of bending lines of an article, the node is displaced in the extending direction of the bending line which forms the smallest angle **(e.g. Section 3.5.1 B-Spline)** with respect to the transformation vector and by an amount corresponding to a component of the input transformation vector in the extending direction of the bending line **(e.g. extension of a corner. Figure 6)**, and

when a node is not located on the bending line of a article, the node is displaced in accordance with a vector obtained by projecting the transformation instruction vector onto an extension plane of an article shape plane at that node. **(Section 3.4.1, Right Column, Two Deformations and corresponding description)**

Regarding Claim 2:

The reference discloses An apparatus according to claim 1, wherein the shape of the article which has already been generated is composed of a base shape and an auxiliary shape, and the transformation processing device performs a transformation process only with respect to the base shape thereby generating a new base shape, and attaches the auxiliary shape to the new base shape by an auxiliary shape adding device at a predetermined position of the new base shape. **(Section 5.2, shape adjustment)**

Regarding Claim 3:

The reference discloses An apparatus according to claim 1, wherein the input received by the input device from the operator includes instructions for an operative node of the transformation instruction vector. **(Section 4.3.2.1, user modification utilizing vectors)**

Regarding Claim 4:

The reference discloses An apparatus according to claim 3, wherein the instructions for an operative node of the transformation instruction vector include point designation concerning a single node, line designation concerning a line connecting nodes, and plane designation concerning a plane enclosed by nodes. **(Page 351, Introduction, 2D, 3D, and 4D)**

Regarding Claim 5:

The reference discloses A design shape generating method for generating new design shape of an article by performing a shape transformation process with respect to design shape of the article which has been already generated, the method comprising:

a region attribute input step of receiving, by an input device from an operator, input for designating a shape attribute of the article between a transformation region for which the shape transformation process is to be performed and a maintaining region which maintains its shape; **(Page 351, Introduction, interactive editing and shape-dependent transformations)**

a transformation instruction input step of receiving, by an input device from the operator, a transformation instruction vector which is defined by a direction and an amount of transformation with respect to the article, **(Interpreted to be shape deformation. Section 2.1-2.2, and 2.3.1-2.3.3)** and

a shape transformation processing step of performing by a transformation processing device a displacement process with respect to a node of a shape element in accordance with the transformation instruction vector which is input, the shape transformation processing step including: **(Interpreted to be shape deformation. Section 2.1-2.2, and 2.3.1-2.3.3)**

not displacing the node when the node is located at a boundary between the transformation region and the maintaining region **(Section 2.1, point displacement. Section 2.2, intermediate space)**

displacing the node in accordance with the input transformation instruction vector as follows then the node belongs only to the transformation region by **(Section 2.1, point displacement. Section 2.2, intermediate space)**

when the node is located on a single bending line of an article **(e.g. 2D, 3D, and 4d shapes)** , the node is displaced in the extending direction of the bending line and by an amount corresponding to a component of the input transformation vector **(e.g. merely shape deformation and transformation)** in the extending direction of the bending line, **(Figure 6. With respect to the type of shape transformation the reference discloses in Figure 6 and in section 3.4.1 three dimensional deformations. A single bending line, multiple bending lines, and no bending lines can be seen in the Cylinder, Cone, Pyramid, Sphere, etc shapes of Figure 6 which are the resultant of the deformations of the cube of Figure 6.)**

when a node is located on the intersection of a plurality of bending lines of an article, the node is displaced in the extending direction of the bending line which forms the smallest angle **(e.g. Section 3.5.1 B-Spline)** with respect to the transformation vector and by an amount corresponding to a component of the input transformation vector in the extending direction of the bending line **(e.g. extension of a corner)**, and

when a node is not located on the bending line of a article, the node is displaced in accordance with a vector obtained by projecting the transformation instruction vector onto an extension plane of an article shape plane at that node. **(Section 3.4.1, Right Column, Two Deformations and corresponding description)**

Regarding Claim 6:

The reference discloses A method according to claim 5, wherein the shape of the article which has already been generated is composed of a base shape and an auxiliary shape, and a transformation process is performed only with respect to the base shape, thereby generating a new base shape and the auxiliary shape is attached to the new base shape by an auxiliary shape adding device at a predetermined position of the new base shape. **(Section 5.2, shape adjustment)**

Regarding Claim 8:

The reference discloses A method according to claim 5, wherein in the transformation instruction input step, the input received by the input device from the operator includes instructions for an operative node of the transformation instruction vector. **(Section 4.3.2.1, user modification utilizing vectors)**

Regarding Claim 9:

The reference discloses A method according to claim 8, wherein the instructions for the operative node of the transformation instruction vector include point designation concerning a single node, line designation concerning a line connecting nodes, and plane designation concerning a plane enclosed by nodes. **(Page 351, Introduction, 2D, 3D, and 4D)**

Regarding Claim 10:

The reference discloses A method according to claim 5, wherein in the shape transformation processing step, when an edge line connecting nodes of the transformation region is to extend beyond a node belonging to the boundary between the maintaining region and the transformation region as a result of node displacement in accordance with the transformation instruction vector input by the operator,

(1) the transformation instruction vector input by the operator is divided into a first transformation instruction vector which terminates where the edge line connecting nodes in the transformation region reaches a node in the maintaining region and a second transformation instruction vector which starts where the edge line connecting the nodes in the transformation region reaches the node in the maintaining region; **(Interpreted to be shape transformation within a shape. Section 3.4.1, Right Column, Two Deformations and corresponding description. See also Section 2.2, intermediate space)**

(2) a shape transformation process in accordance with the first transformation instruction vector is performed only with respect to the transformation region which is designated by the operator; **(Interpreted to be shape deformation based on user interaction. Section 3.4.1, Right Column, Two Deformations and corresponding description. See also Section 4.3.2.1, user modification utilizing vectors)**

(3) the attribute of the maintaining region including the node which contacts the edge line of the transformation region is reallocated as the attribute of the transformation region; **(Interpreted to be shape transformation within a shape. Section 3.4.1, Right Column, Two Deformations and corresponding description. See also Section 2.2, intermediate space. See also Section 4.3.2.1, user modification utilizing**

vectors)

and

(4) a shape transformation process in accordance with the second transformation instruction vector is performed with respect to the transformation region, including the reallocated transformation region, of the article shape which has been subjected to the transformation process in accordance with the first transformation instruction vector. **(Interpreted to be shape deformation based on user interaction. Section 3.4.1, Right Column, Two Deformations and corresponding description)**

Regarding Claim 11:

The reference discloses A method according to claim 10, wherein in the transformation instruction input step, the input includes a predetermined angle between the transformation instruction vector and the article bending line, wherein in the shape transformation processing step, a node for which the angle formed by the transformation instruction vector and the bending line is less than the predetermined angle is displaced in the extending direction of the bending line, and a node for which the angle formed by the transformation instruction vector and the bending line is equal to or greater than the predetermined angle is displaced in accordance with the transformation vector. **(Interpreted to be corner transformation. Section 3.5.1, B-Spline functions)**

Conclusion

8. All Claims are rejected.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAIF A. ALHIJA whose telephone number is (571)272-8635. The examiner can normally be reached on M-F, 11:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571) 272-2279. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. *Informal or draft communication, please label PROPOSED or DRAFT*, can be additionally sent to the Examiners fax phone number, (571) 273-8635.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kamini S Shah/

Supervisory Patent Examiner, Art Unit 2128

SAA

September 26, 2008